

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (canceled)
2. (currently amended) The closed loop three color alignment system of claim + 16 wherein said actuator reduces x, y error.
3. (currently amended) The closed loop three color alignment system of claim + 16 wherein said actuator is a piezo-electric motor.
4. (currently amended) The closed loop three color alignment system of claim + 16 wherein said actuator is a motor and lead screw.
5. (currently amended) The closed loop three color alignment system of claim + 16 wherein said actuator resolves said errors in six axes.
6. (currently amended) The closed loop three color alignment system of claim + 16 wherein said actuator is connected to at least one of said spatial light modulators.
7. (original) The closed loop three color alignment system of claim 6 wherein said actuator moves said spatial light modulator to change a focus position of said spatial light modulator.
8. (currently amended) The closed loop three color alignment system of claim + 16 wherein said actuator is connected to an optical element of said optical engine.

9. (original) The closed loop three color alignment system of claim 8 wherein said actuator moves said optical element to change a focus position of said spatial light modulator.

10. (currently amended) The closed loop three color alignment system of + 16 wherein said microprocessor determines said error continuously.

11. (currently amended) The closed loop three color alignment system of + 16 wherein said microprocessor determines said error at predetermined intervals.

12. (currently amended) The closed loop three color alignment system of + 16 wherein said microprocessor sends said signal to said component continuously.

13. (currently amended) The closed loop three color alignment system of + 16 wherein said microprocessor sends said signal to said component at predetermined intervals.

14. (currently amended) The closed loop three color alignment system of + 16 wherein said first second and third fiducial data are comprised of a single pattern.

15. (currently amended) The closed loop three color alignment system of + 14 wherein said single fiducial pattern is used by said component to resolve said error in two dimensions.

16. (currently amended) ~~The closed loop three color alignment system of +~~ A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelength bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelength bands;

wherein said first, second, and third wavelength bands are directed respectively to said first, second, and third spatial light modulator;

a combiner which combines said modulated first, second, and third wavelength bands;

a diverter which diverts a portion of said combined modulated wavelength bands to a sensor;

wherein said sensor senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of said fiducials;

wherein said microprocessor sends a signal to at least one component of said system to resolve said error;

wherein said at least one component is an actuator; and

wherein said microprocessor sends a signal to a driver for said spatial light modulator to index a row start position of said spatial light modulator.

17. (currently amended) ~~The closed loop three color alignment system of 1-~~ A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelength bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelength bands;

wherein said first, second, and third wavelength bands are directed respectively to said first, second, and third spatial light modulator;

a combiner which combines said modulated first, second, and third wavelength bands;

a diverter which diverts a portion of said combined modulated wavelength bands to a sensor;
wherein said sensor senses a relative position of the each of said fiducials and sends said position information to a microprocessor;
wherein said microprocessor determines an error based on said relative position of said fiducials;
wherein said microprocessor sends a signal to at least one component of said system to resolve said error;
wherein said at least one component is an actuator; and
wherein said microprocessor sends a signal to a driver for said spatial light modulator to index a column start position of said spatial light modulator.

18. (original) The closed loop three color alignment system of 16 wherein said driver of said spatial light modulator provides a coarse error correction and said component provides a fine error correction.

19. (original) The closed loop three color alignment system of 18 wherein said driver of said spatial light modulator provides said coarse error correction to within approximately half a pixel.

20. (currently amended) The closed loop three color alignment system of ~~1~~ 16 wherein said error is selected from a group comprised of skew error, position error, and focus error.

21. (canceled)

22. (currently amended) The closed loop three color alignment system of claim ~~21~~ 24 wherein said at least one component is an optically transparent plate.

23. (currently amended) The closed loop three color alignment system of claim ~~21~~ 24 wherein said optically transparent plate rotates in a plurality of axes.

24. (currently amended) ~~The closed loop three color alignment system of claim 21~~ A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelengths bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelengths bands;

wherein said first, second, and third wavelengths bands are directed respectively to said first, second, and third, spatial light modulator;

a combiner which combines said modulated first, second, and third wavelengths bands;

a sensor which senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of said fiducials;

wherein said microprocessor sends a signal to at least one of a plurality of components of said system to resolve said error;

wherein one of said components is an optical element; and

wherein said at least one component is prism.

25. (currently amended) The closed loop three color alignment system of claim ~~21~~ 24 wherein said at least one component is a k-mirror.

26. (currently amended) The closed loop three color alignment system of claim ~~21~~ 24 wherein said at least one of said spatial light modulators is used as a reference and does not move.

27. (currently amended) ~~The closed loop three color alignment system of claim 21~~ A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelengths bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelengths bands;

wherein said first, second, and third wavelengths bands are directed respectively to said first, second, and third, spatial light modulator;

a combiner which combines said modulated first, second, and third wavelengths bands;

a sensor which senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of said fiducials;

wherein said microprocessor sends a signal to at least one of a plurality of components of said system to resolve said error;

wherein one of said components is an optical element; and

where wherein at least one component is an actuator which translates said spatial light modulators in an x and y of said direction and a second component is a prism which corrects a skew error.

28. (currently amended) The closed loop three color alignment system of ~~24~~ 27 wherein said microprocessor determines said error continuously.

29. (currently amended) The closed loop three color alignment system of ~~24~~ 27 wherein said microprocessor determines said error at predetermined intervals.

30. (currently amended) The closed loop three color alignment system of ~~24~~ 27 wherein said microprocessor sends said signal to said component continuously.

31. (currently amended) The closed loop three color alignment system of ~~24~~ 27 wherein said microprocessor sends said signal to said component at predetermined intervals.

32. (original) A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelengths bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelengths bands;

wherein said first, second, and third wavelengths bands are directed respectively to said first, second, and third, spatial light modulator;

a combiner which combines said modulated first, second, and third wavelengths bands;

a diverter which diverts a portion of said combined modulated wavelengths bands to a sensor;

wherein said sensor senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of each of said fiducials;

wherein said microprocessor sends a resolving signal to an actuator on at least one of said spatial light modulators to resolve said error; and

wherein said resolving signal is sent by said microprocessor when said image data is substantially uniform across said spatial light modulators.

33. (currently amended) The closed loop three color alignment system of claim ~~32~~ 43 wherein said actuator reduces x, y error.

34. (currently amended) The closed loop three color alignment system of claim ~~32~~ 43 wherein said actuator is a piezo-electric motor.

35. (currently amended) The closed loop three color alignment system of claim ~~32~~ 43 wherein said actuator is a motor and lead screw.

36. (currently amended) The closed loop three color alignment system of claim ~~32~~ 43 wherein said actuator resolves said errors in six axis.

37. (currently amended) The closed loop three color alignment system of claim ~~32~~ 43 wherein said actuator is connected to at least one of said spatial light modulators.

38. (currently amended) The closed loop three color alignment system of claim ~~32~~ 43 wherein said actuator moves said spatial light modulator to change a focus position of said spatial light modulator.

39. (currently amended) The closed loop three color alignment system of claim ~~32~~ 43 wherein said actuator is connected to an optical element of said optical engine.

40. (original) The closed loop three color alignment system of claim 39 wherein said actuator moves said optical element to change a focus position of said spatial light modulator.

41. (currently amended) The closed loop three color alignment system of ~~32~~ 43 wherein said first second and third fiducial data are comprised of a single pattern.

42. (currently amended) The closed loop three color alignment system of ~~32~~ 43 wherein said single fiducial pattern is used by said component to resolve said error in two dimensions.

43. (currently amended) ~~The closed loop three color alignment system of 32~~ A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelengths bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelengths bands;

wherein said first, second, and third wavelengths bands are directed respectively to said first, second, and third, spatial light modulator;

a combiner which combines said modulated first, second, and third wavelengths bands;

a diverter which diverts a portion of said combined modulated wavelengths bands to a sensor;

wherein said sensor senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of each of said fiducials;

wherein said microprocessor sends a resolving signal to an actuator on at least one of said spatial light modulators to resolve said error;

wherein said resolving signal is sent by said microprocessor when said image data is substantially uniform across said spatial light modulators;
and

wherein said microprocessor sends a signal to a driver for said spatial light modulator to index a row start position of said spatial light modulator.

44. (original) The closed loop three color alignment system of 43 wherein said driver of said spatial light modulator provides a coarse error correction and said component provides a fine error correction.

45. (original) The closed loop three color alignment system of 44 wherein said driver of said spatial light modulator provides said coarse error correction to within approximately half a pixel.

46. (currently amended) The closed loop three color alignment system of ~~32~~ 43 wherein said error is selected from a group comprised of skew error, position error, and focus error.

47. (currently amended) ~~The closed loop three color alignment system of claim 32~~ A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelengths bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelengths bands;

wherein said first, second, and third wavelengths bands are directed respectively to said first, second, and third, spatial light modulator;

a combiner which combines said modulated first, second, and third wavelengths bands;

a diverter which diverts a portion of said combined modulated wavelengths bands to a sensor;

wherein said sensor senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of each of said fiducials;

wherein said microprocessor sends a resolving signal to an actuator on at least one of said spatial light modulators to resolve said error;

wherein said resolving signal is sent by said microprocessor when said image data is substantially uniform across said spatial light modulators;

and

wherein said microprocessor sends a signal to a driver for said spatial light modulator to index a column start position of said spatial light modulator.

Claims 48-52 (canceled)

53. (original) A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelength bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelength bands;

wherein said first, second, and third wavelength bands are directed respectively to said first, second, and third spatial light modulator;

a combiner which combines said modulated first, second, and third wavelength bands;

a diverter which diverts a portion of said combined modulated wavelength bands to a sensor;

wherein said sensor senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of said fiducials; and

wherein said microprocessor sends a signal to a driver for said spatial light modulator to index a row or column start position.

54. (new) A closed loop three color alignment system for a digital projector comprising:

a light source;

an optical engine which splits a beam of light from said light source into first, second, and third wavelength bands;

a first, second, and third spatial light modulator which imparts image data and first, second, and third fiducial data respectively to said first, second, and third wavelength bands;

wherein said first, second, and third wavelength bands are directed respectively to said first, second, and third spatial light modulator;

a combiner which combines said modulated first, second, and third wavelength bands;

a diverter which diverts a portion of said combined modulated wavelength bands to a sensor;

wherein said sensor senses a relative position of the each of said fiducials and sends said position information to a microprocessor;

wherein said microprocessor determines an error based on said relative position of said fiducials;

wherein said microprocessor sends a signal to at least one component of said system to resolve said error;

wherein said at least one component is an actuator; and

wherein said fiducials are outside a projected image area.